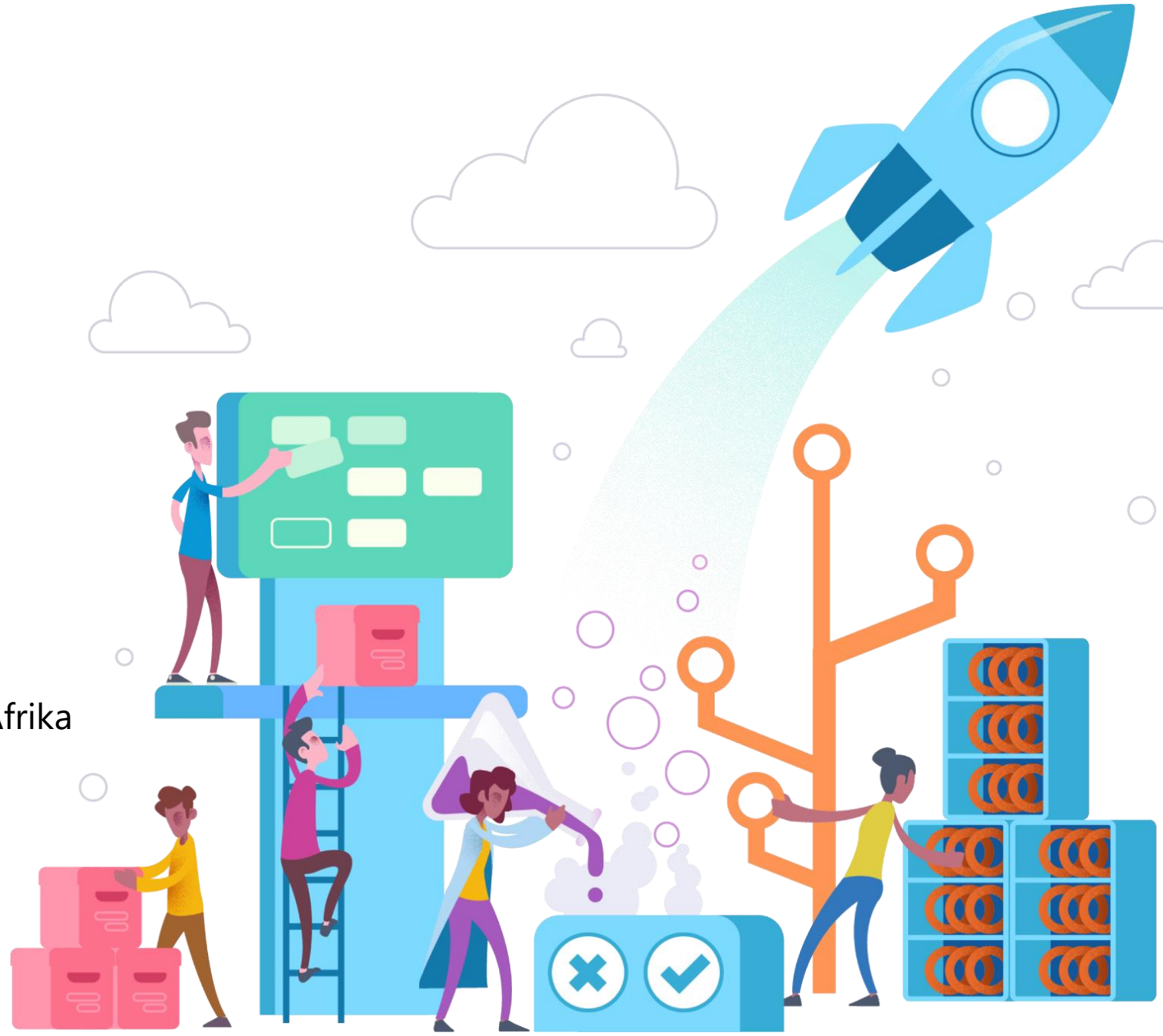
Microsoft

Azure DevOps

Best Practices

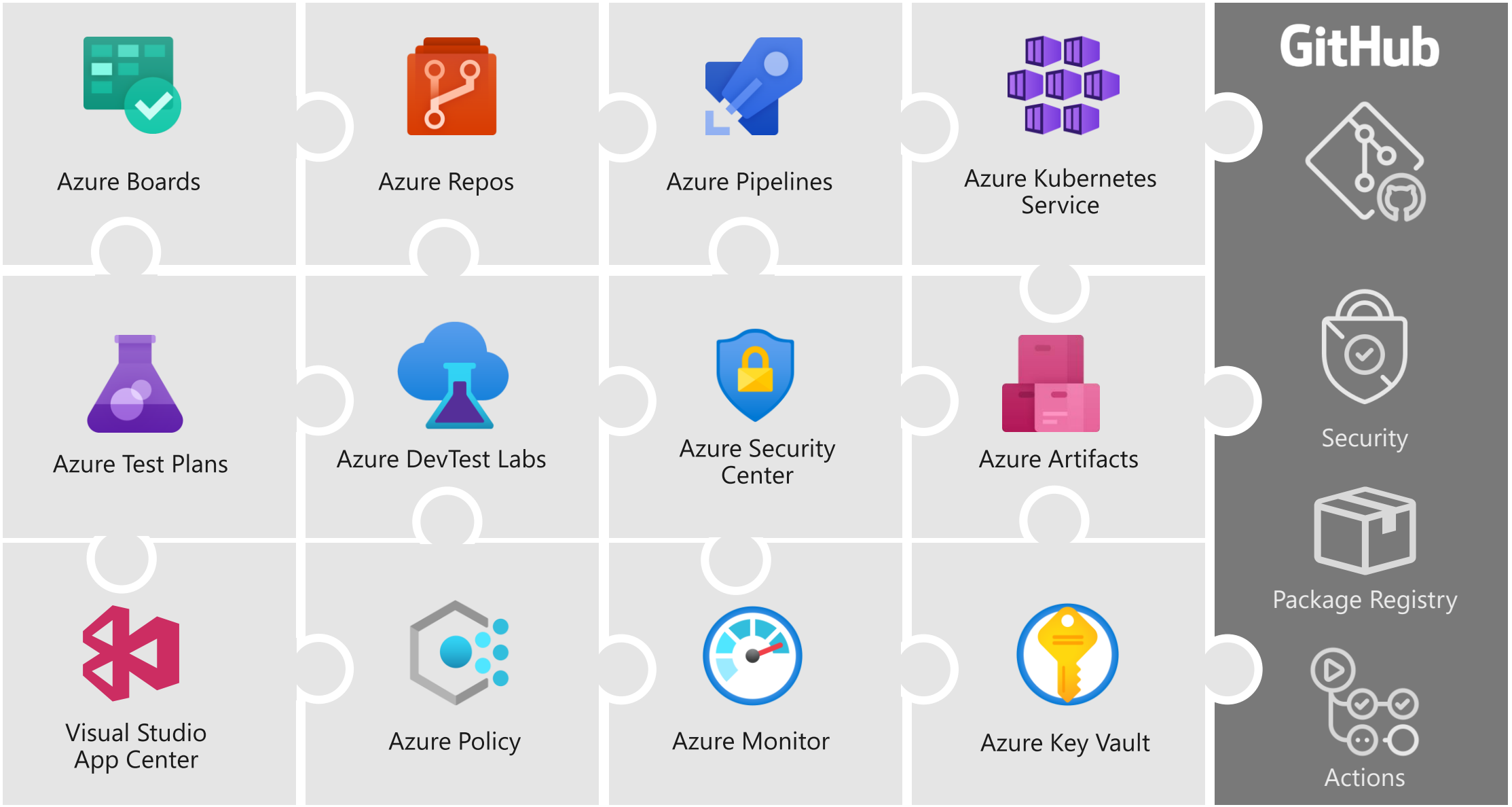
Dara Oladapo
Customer Success Engineer at Microsoft 4Afrika
@DaraOladapo



Scan here to learn more about Microsoft AI

Or Go To:
https://aka.ms/AA6lrep

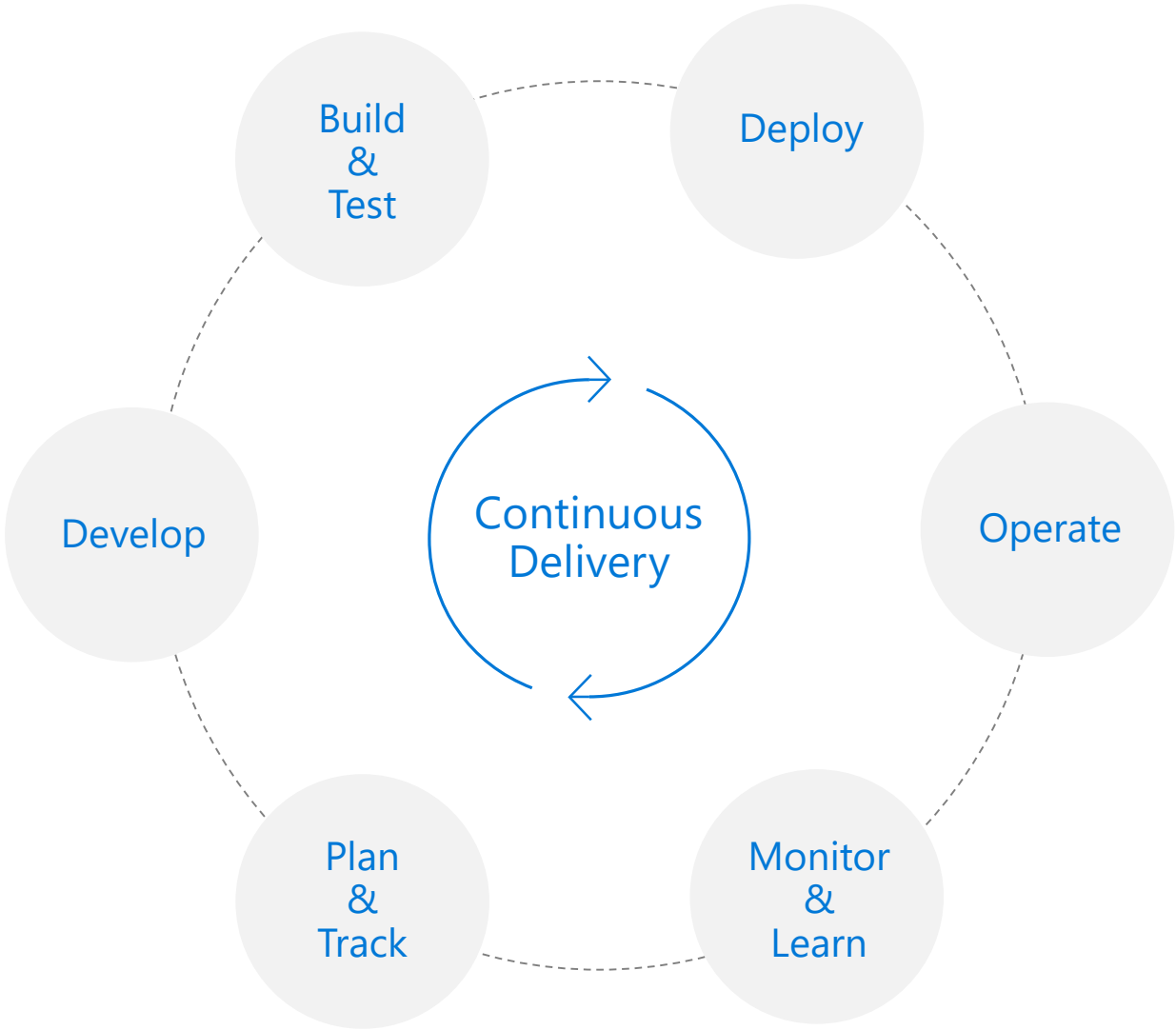
Microsoft's DevOps Tooling – enhanced by GitHub



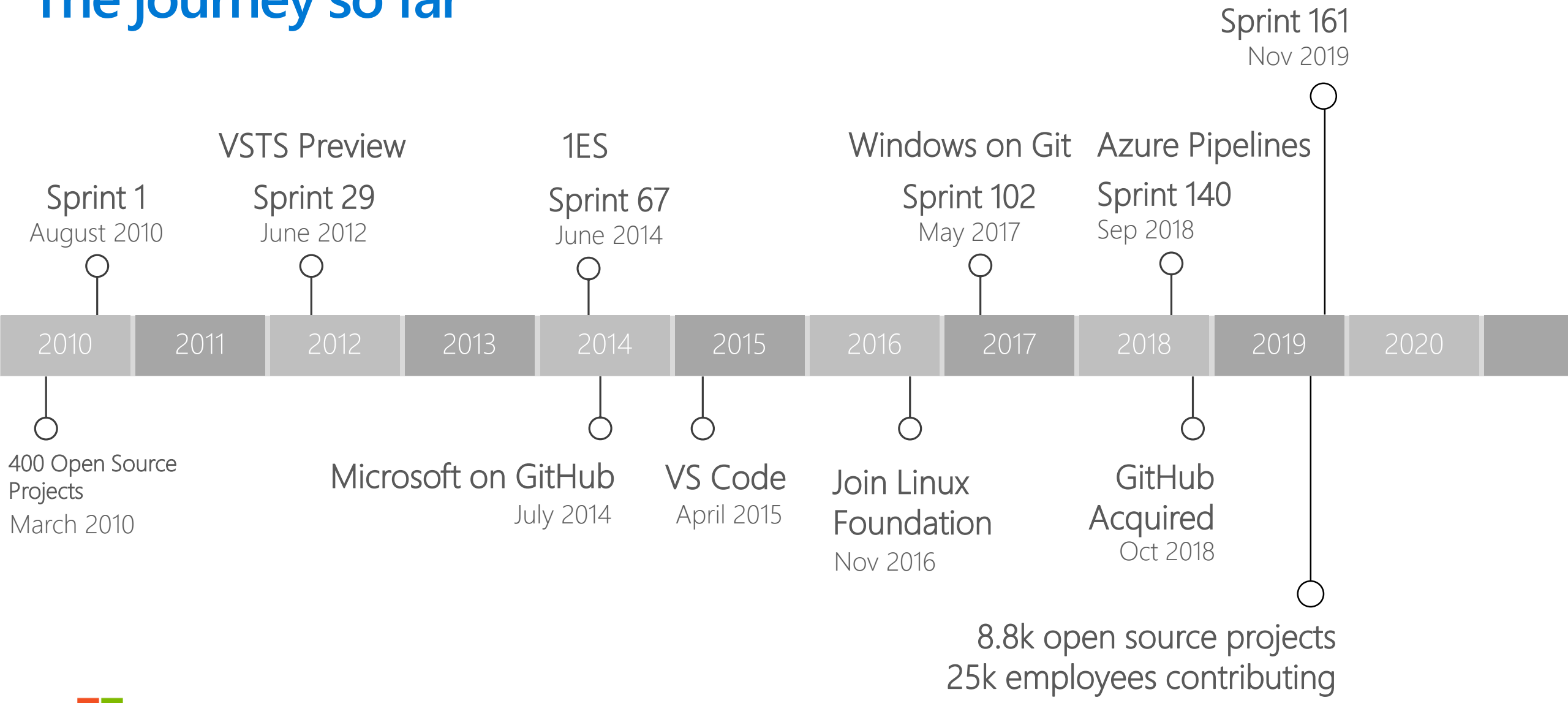
What is DevOps?

People. Process. Products.

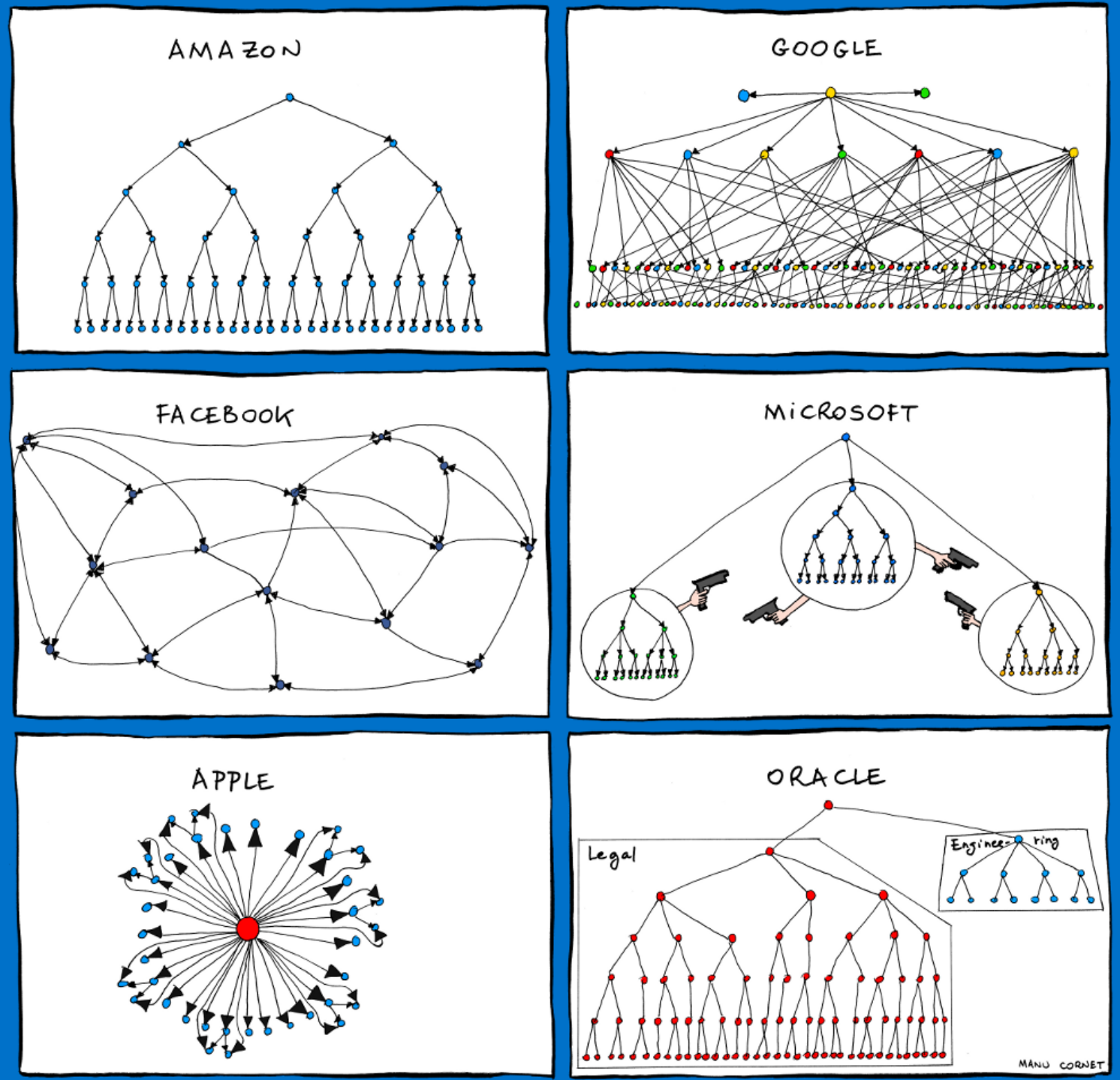
> DevOps is the union of **people**, **process**, and **products** to enable continuous delivery of value to your end users.



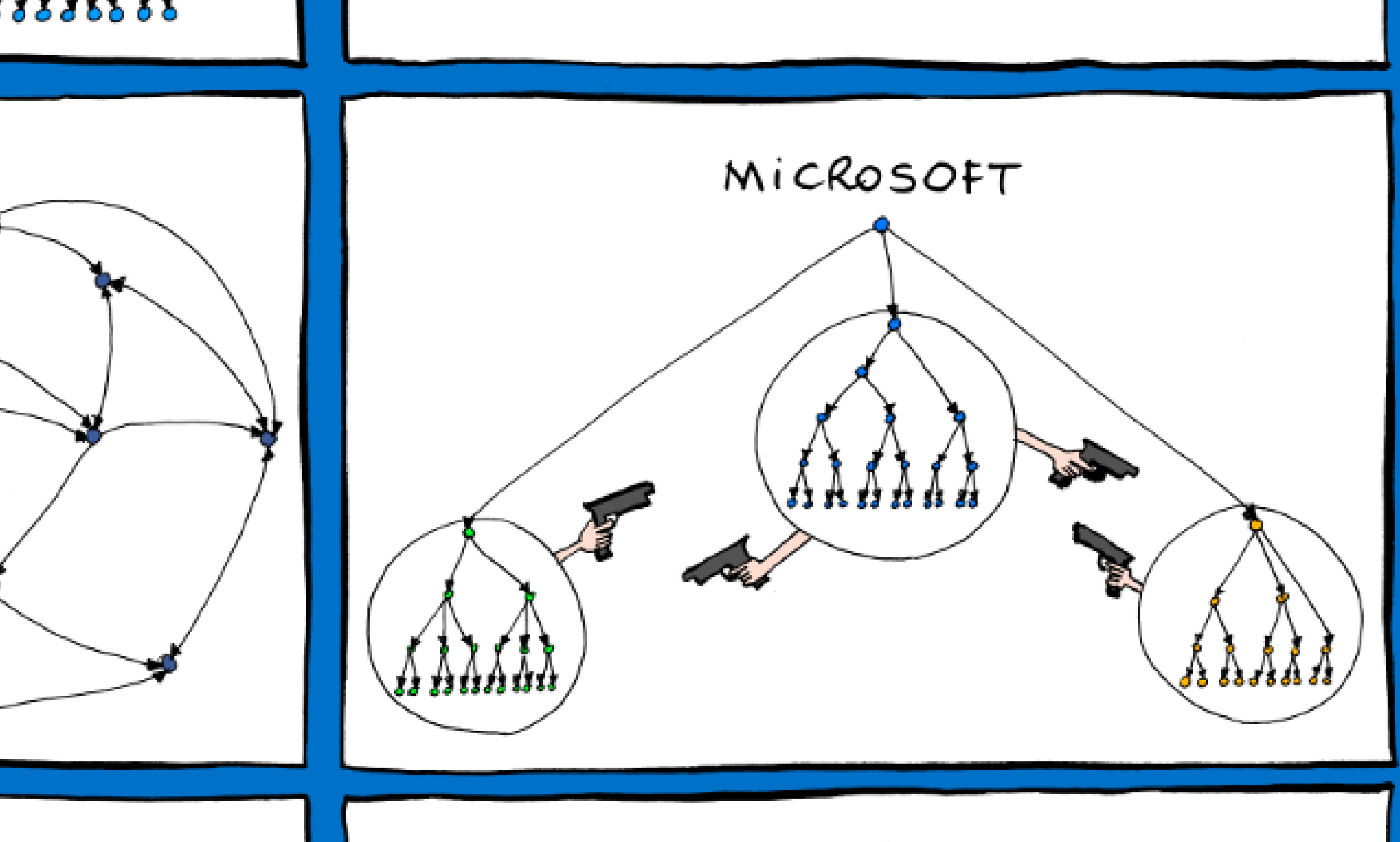
The journey so far



Microsoft

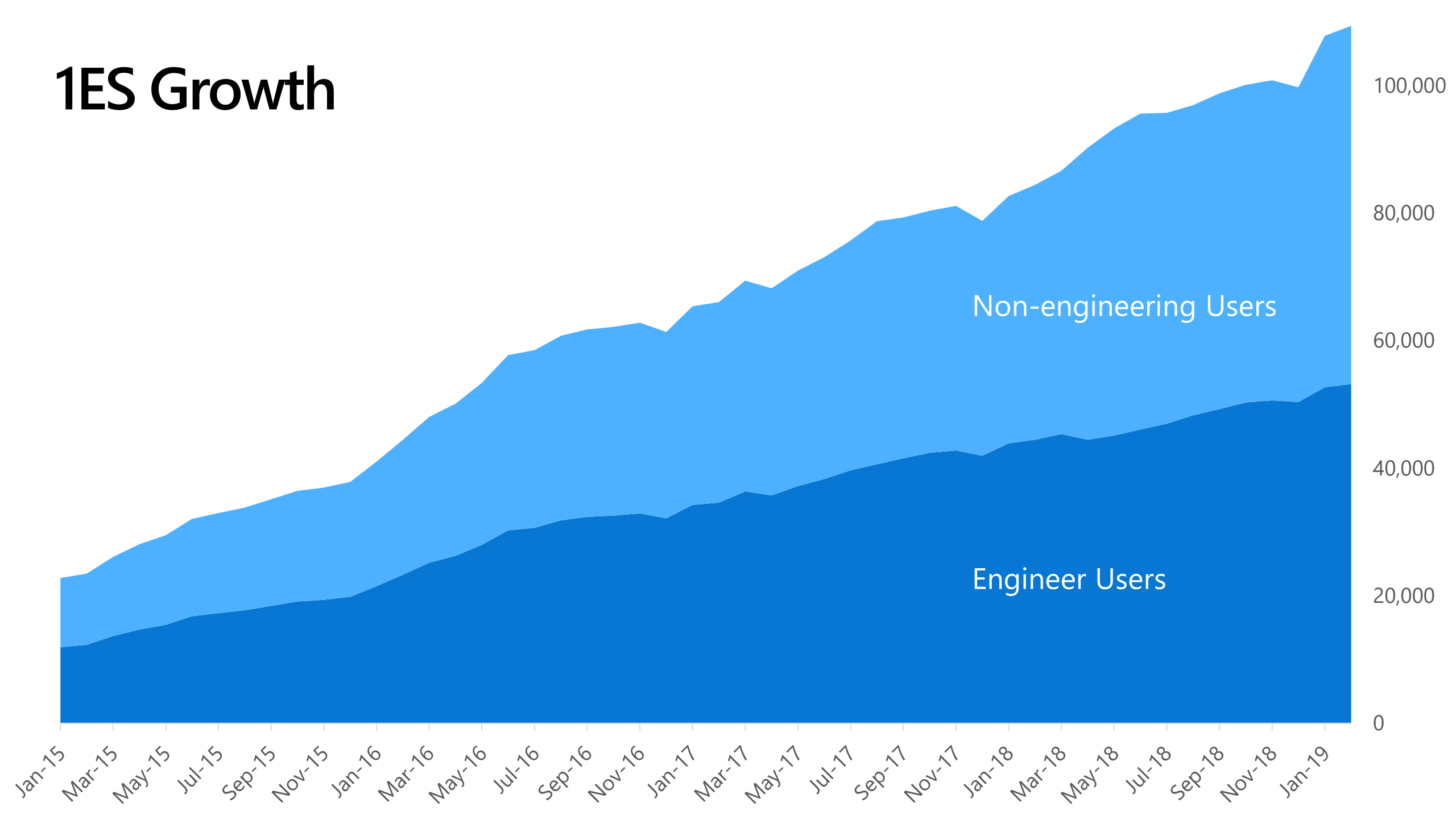


http://www.bonkersworld.net/images/2011.06.27_organizational_charts.png



http://www.bonkersworld.net/images/2011.06.27_organizational_charts.png

1ES Growth


Non-engineering Users
Engineer Users
100,000
80,000
60,000
40,000
20,000
0
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19

107,000

Engineers in Microsoft working with Azure DevOps

One second per day is like adding

3.7 **More people** to Microsoft

One minute per day is like adding

163 **More people** to Microsoft

One hour per day is like adding

$2.7B
per year

DevOps at Microsoft

https://aka.ms/DevOpsAtMicrosoft

110k
Active users inside Microsoft

4.6m
Builds per month

28k
Work items created per day

82,000
Deployments per day

2.4m
Private Git commits per month

8.8k
Open Source repos on GItHub

25k
Employees contributing to open source

Data: Internal Microsoft engineering system activity, Nov 2019

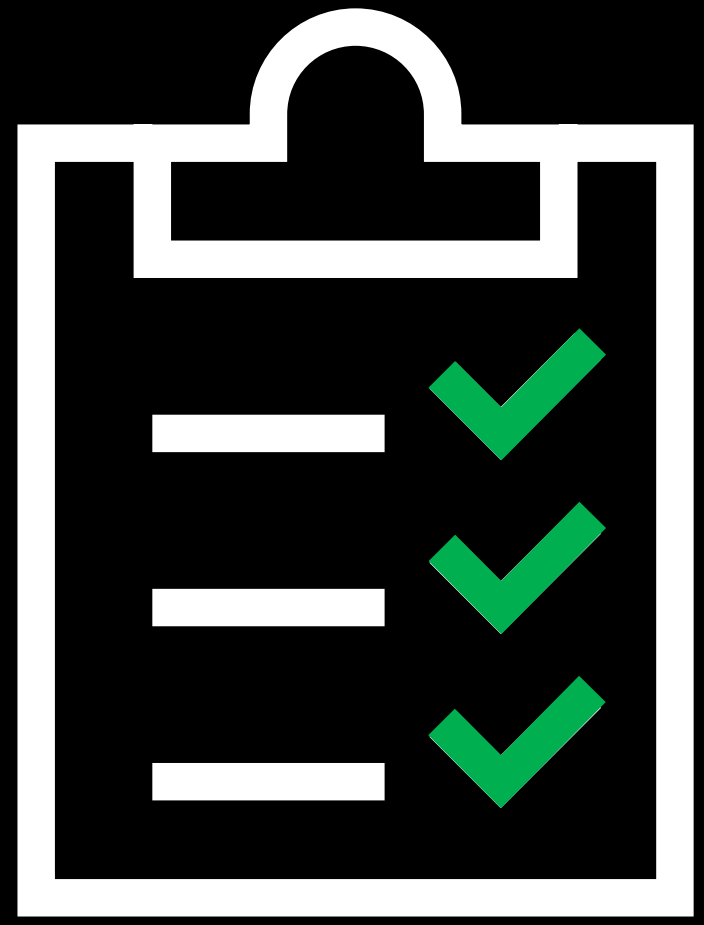
Shipping
is a Feature

Our Definition of Done

Live in production,

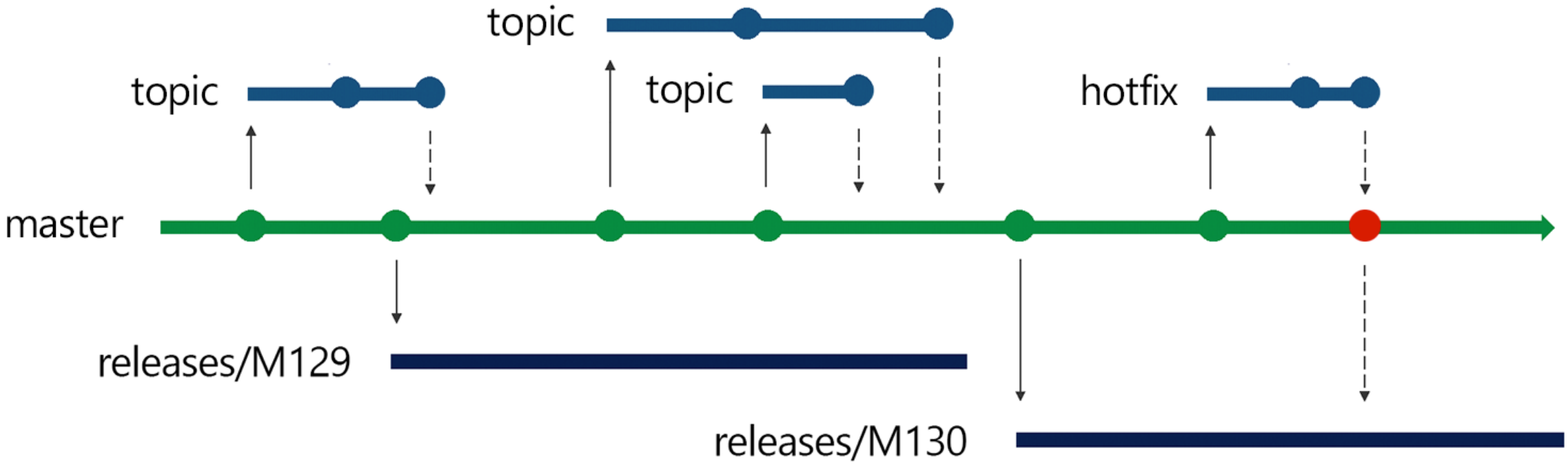
collecting telemetry

supporting or diminishing the starting hypothesis.



Release Flow

Using Trunk Based Development to avoid Merge Hell



Feature Flags

All code is deployed, but feature flags control exposure

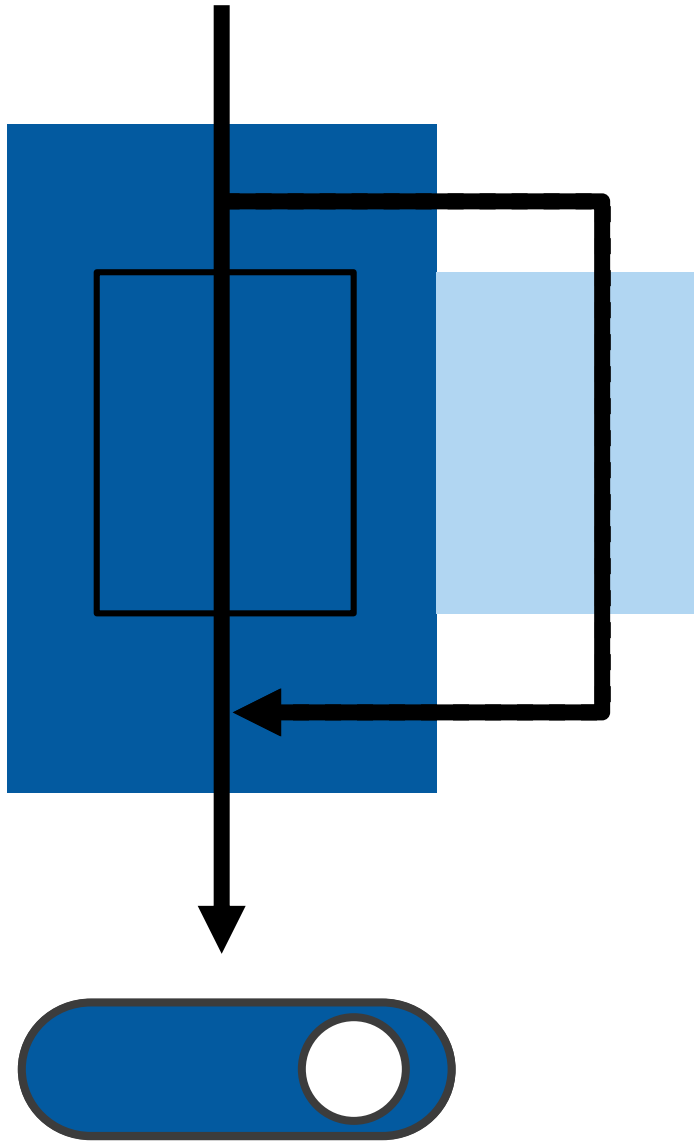
Reduces integration debt

Flags provide runtime control down to individual user

Users can be added or removed with no redeployment

Mechanism for progressive experimentation & refinement

Enables dark launch

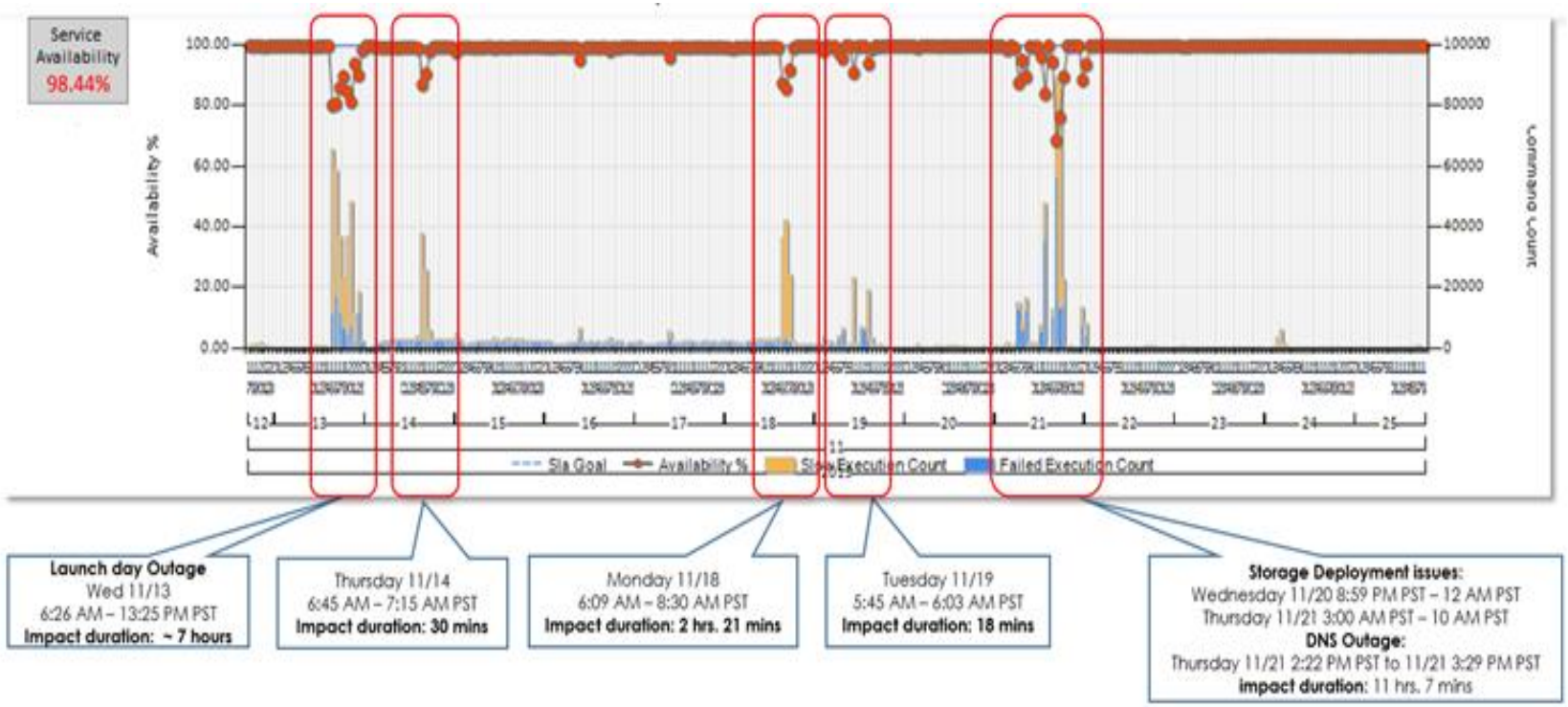


Awesome! What could go wrong?

Features to be revealed at big event

We turned features on globally just before the keynote…

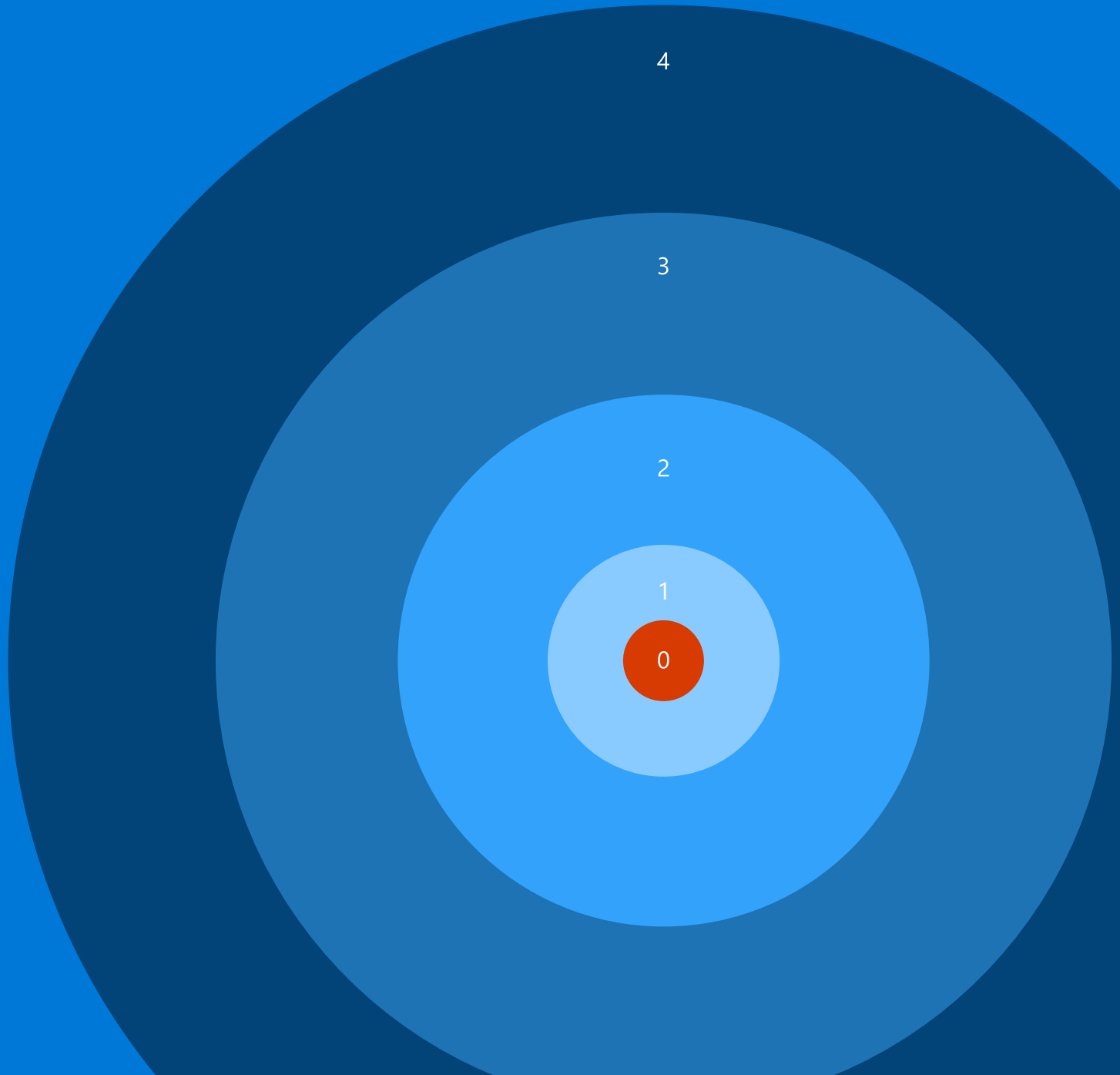
It didn’t go well.



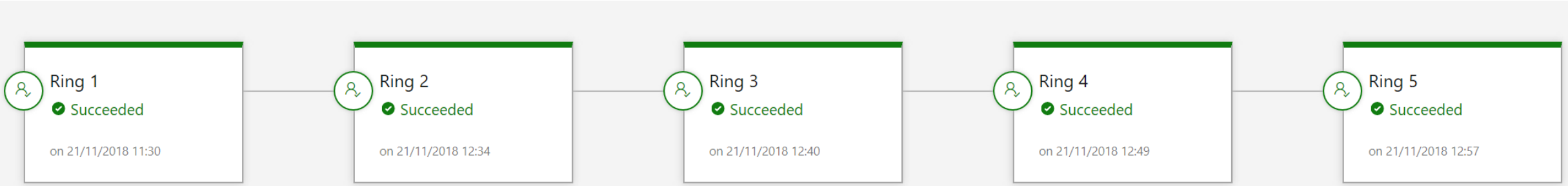
Everyone
tests in production

Your aim won’t be perfect.

Control the blast radius.



Tracking Deployments to Production (5 Rings)



1. Canary (internal users)
2. Smallest external data center
3. Largest external data center
4. International data centers
5. All the rest

Customer Obsessed DevOps

Live Site Culture

- Live site status is always the top priority
- Weekly live site review
- Root cause everything
- LSI fixes go into backlog (2 sprint rule)
- Actionable alerts
- Monthly service review
- On-call Designated Responsible Individual (DRI)
- Customer Focused Availability model (SLA)
- Per team / service health reports

Measure Impact not Activity

Usage

- Acquisition
- Engagement
- Satisfaction
- Churn
- Feature Usage

Idea to Data

- Time to Build
- Time to Self Test
- Time to Deploy
- Time to Learn

Live Site Health

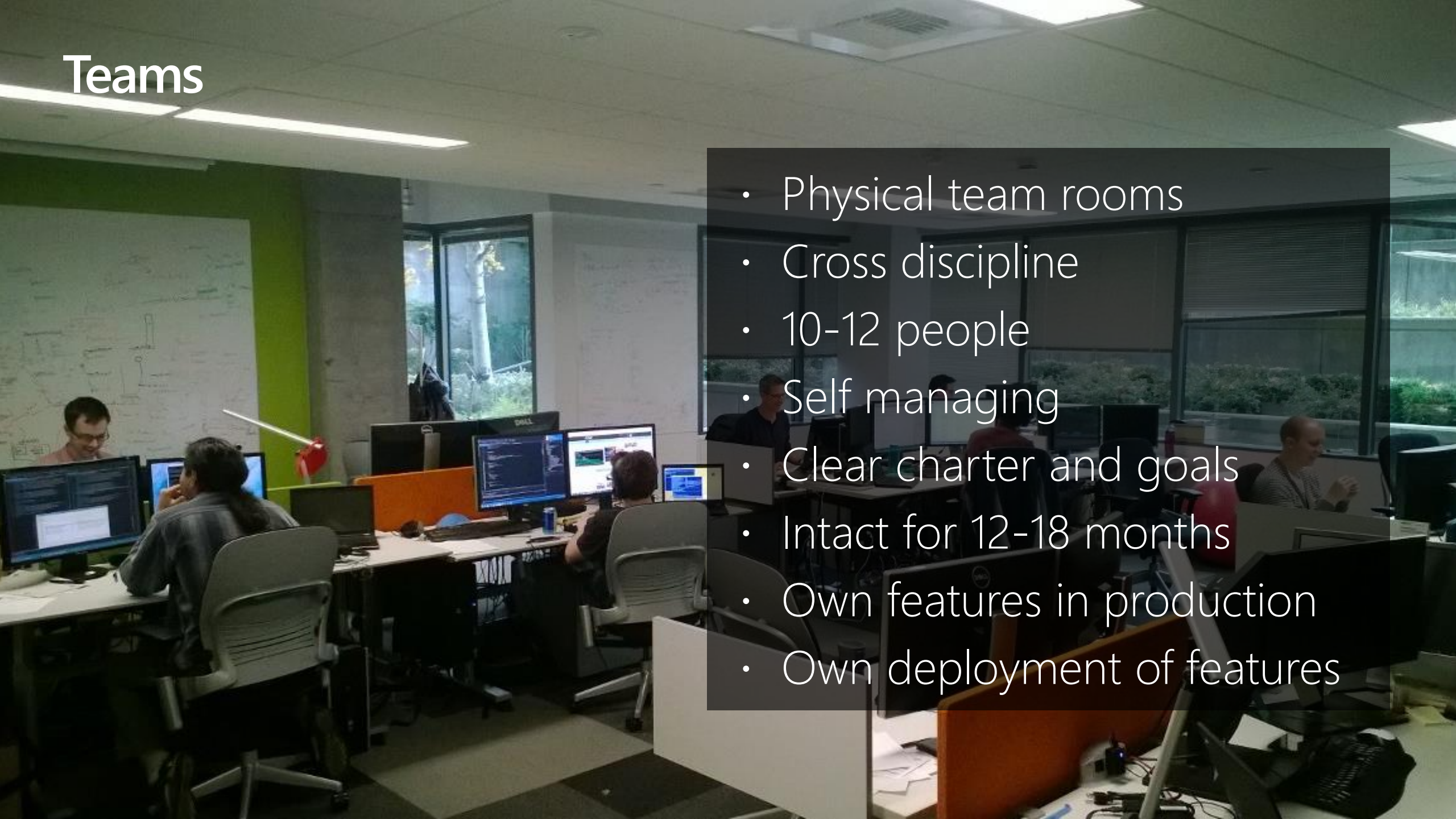
- Time to Detect
- Time to Communicate
- Time to Mitigate
- Customer Impact
- Incident Prevention Items
- Aging Live Site Problems
- SLA per Customer
- Customer Support Metrics

Things we don't watch

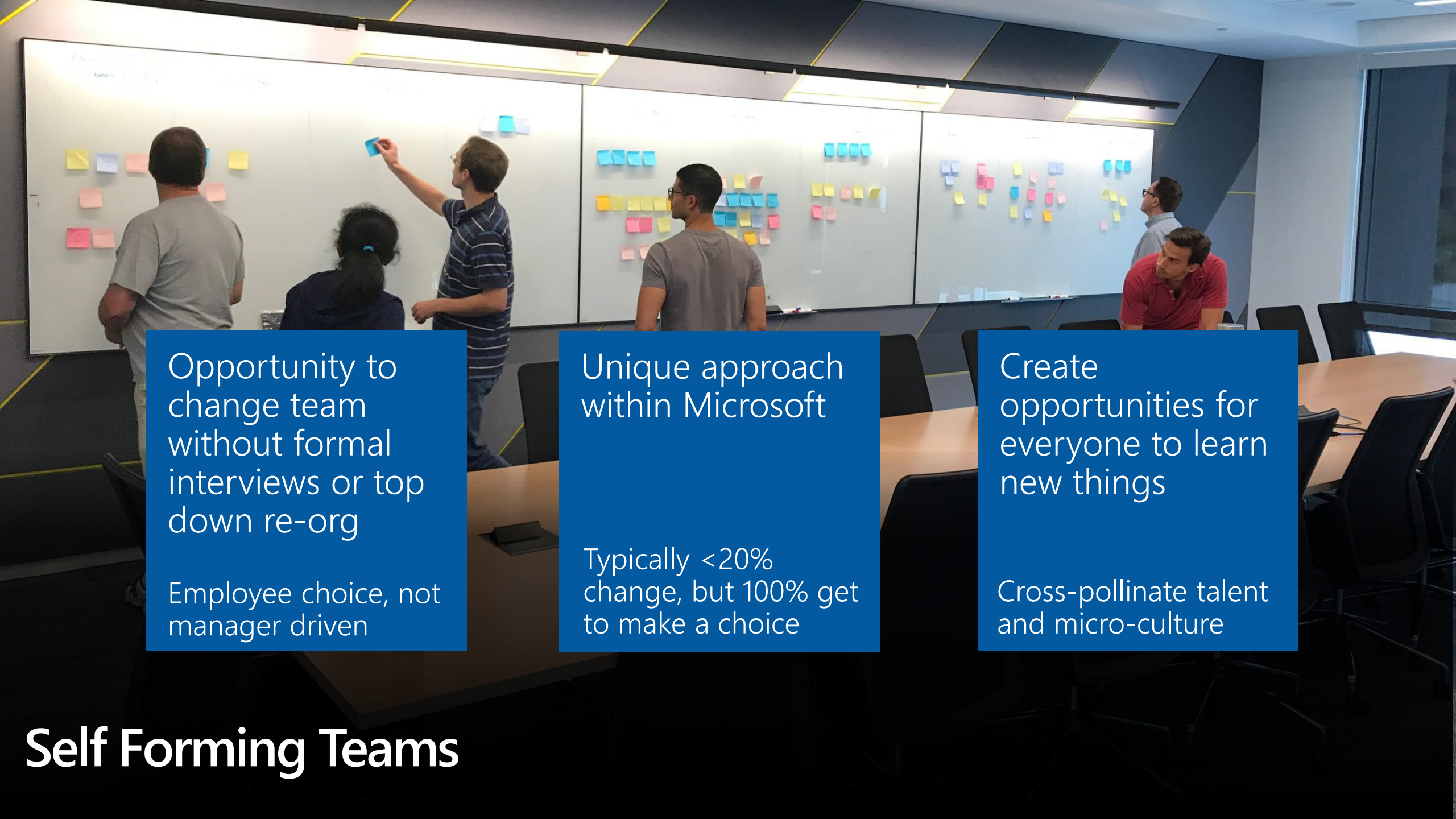
- Original estimate
- Completed hours
- Lines of Code
- Team capacity
- Team burndown
- Team velocity
- # of bugs found

Sustainable DevOps Teams

Teams



- Physical team rooms
- Cross discipline
- 10-12 people
- Self managing
- Clear charter and goals
- Intact for 12-18 months
- Own features in production
- Own deployment of features



Opportunity to change team without formal interviews or top down re-org

Employee choice, not manager driven

Unique approach within Microsoft

Typically <20% change, but 100% get to make a choice

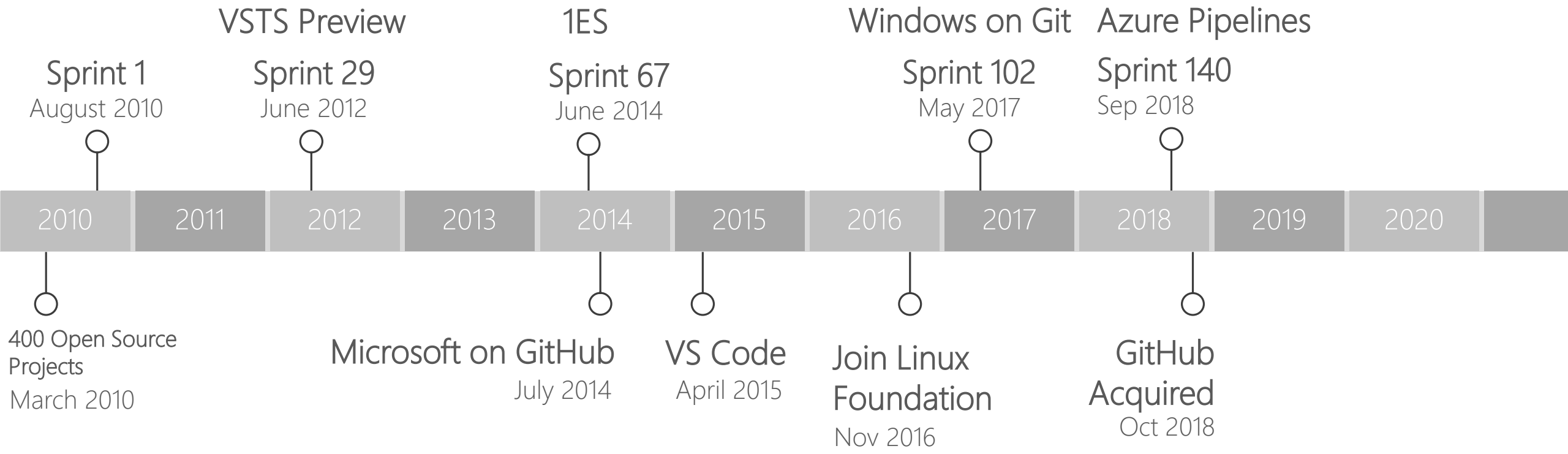
Create opportunities for everyone to learn new things

Cross-pollinate talent and micro-culture

Self Forming Teams

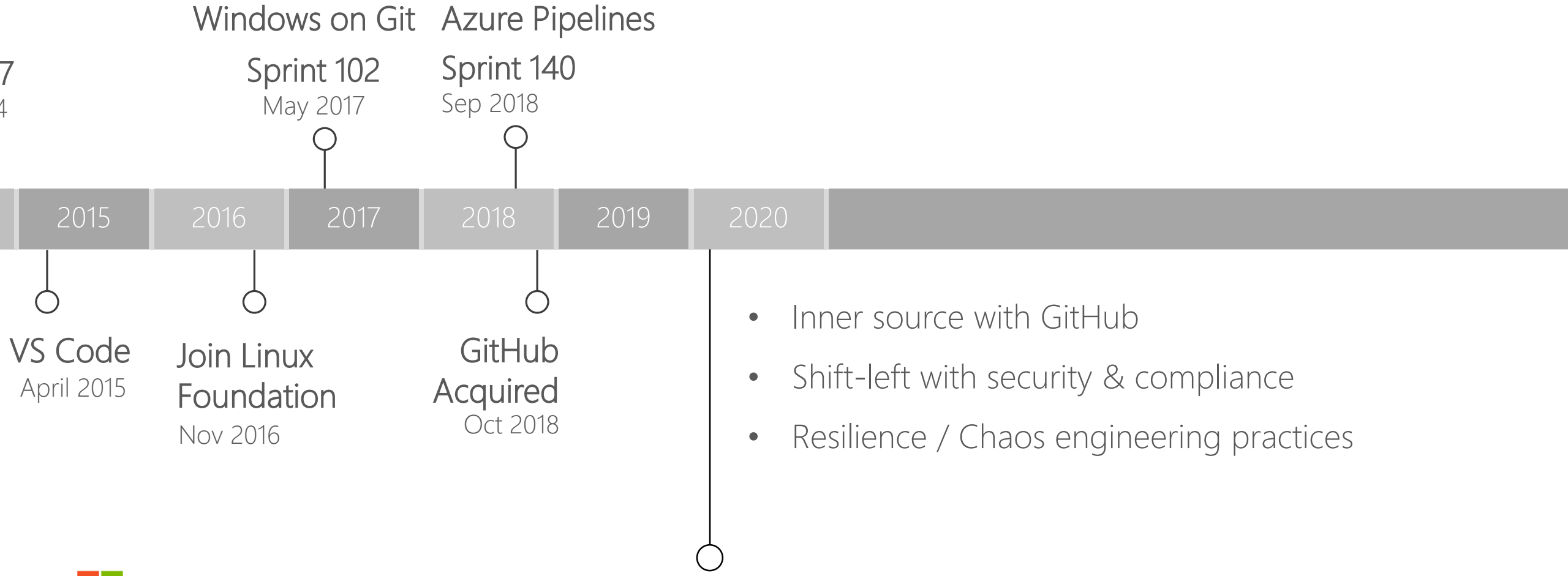
A journey of a thousand miles begins with a single sprint

The journey so far



Microsoft

What's next?



- Inner source with GitHub
- Shift-left with security & compliance
- Resilience / Chaos engineering practices

Microsoft

DevOps isn’t magic

Microsoft

Thank you!

Dara Oladapo

v-dolad@microsoft.com

@daraoladapo

http://aka.ms/MSDevOps

Scan here to learn more about Microsoft AI

Or Go To:
https://aka.ms/AA6lrep

Microsoft Azure